

## WHAT IS CLAIMED IS:

1. A method of inducing pro-inflammatory effects in synovial cells, comprising:  
  
    exposing a plurality of synovial cells to a peptide comprising an amino acid sequence set forth in SEQ ID NO.: 2.
2. The method of Claim 1, wherein the peptide has pro-inflammatory effects on human synovial cells.
3. The method of Claim 1, wherein the peptide induces expression of cell adhesion molecules in human synovial cells.
4. The method of Claim 1, wherein the peptide has pro-inflammatory effects on synovial cells of a rheumatoid joint of a patient.
5. A pharmaceutical composition comprising the peptide of Claim 1 and a pharmaceutically acceptable carrier or diluent.
6. A pharmaceutically acceptable salt or derivative of the peptide of Claim 1.

7. An analog of a peptide comprising an amino acid sequence set forth in SEQ ID NO.: 2, wherein proline 4 comprises an amide form of proline, the analog being substantially ineffective at inducing expression or production of cell adhesion molecules, or cell adhesion messengers, in synovial cells.
8. A pharmaceutical composition comprising the analog of Claim 7 and a pharmaceutically acceptable carrier or diluent.
9. A pharmaceutically acceptable salt or derivative of the analog of Claim 7.
10. A method of treating or preventing inflammation of synovial joint in a subject by administering an effective amount of the analog of Claim 7.
11. A method of treating or preventing rheumatoid arthritis in a subject by administering an effective amount of the analog of Claim 7.

12. A method of inducing pro-inflammatory effects in fibroblastic cells, comprising:  

exposing a plurality of fibroblastic cells to a peptide comprising an amino acid sequence set forth in SEQ ID NO: 2.
13. The method of Claim 12, wherein the fibroblastic cells comprise human lung fibroblastic cells.
14. A method of identifying a receptor for a peptide comprising an amino acid sequence set forth in SEQ ID NO.: 2, comprising exposing a plurality of fibroblastic cells to the amino acid sequence set forth in SEQ ID NO.: 2.
15. A method of identifying a receptor for a peptide comprising an amino acid sequence set forth in SEQ ID NO.: 2, comprising exposing a plurality of synovial cells to the amino acid sequence set forth in SEQ ID NO.: 2.

## REFERENCES

1. Colvin RB, Johnson RA, Mihm MC, and Dvorak HF. Role of the Clotting System in Cell-Mediated Hypersensitivity. J Exp Med 1973, 138:686-698.
2. Accini L, Dixon FJ. Degenerative Vascular Disease and Myocardial Infarction in Mice with Lupus-like Syndrome. Am J. Pathol 1979, 96:477-492.
3. Wood RM, Bick MW. The Effect of Heparin on the Ocular Tuberculin Reaction. Arch Opthamol 1959, 61:709-711.
4. Cohen SB, Benacerraf B, McCluskey RT, Ovary Z. Effects of Anticoagulants on Delayed Hypersensitivity Reaction. J Immunol 1967, 98:351-358.
5. Colvin RB, Dvorak HF. Role of the Clotting System in Cell-Mediated Hypersensitivity II. Kinetics of Fibrinogen/fibrin Accumulation and Vascular Permeability Changes in Tuberculin and Cutaneous Basophil Hypersensitivity Reactions. J Immunol 1975, 114:377-381.
6. Edwards RL, and Rickles FR. Delayed Hypersensitivity in Man: Effects of Systemic Anticoagulation. Science 1978, 200:541-543.
7. Colvin RB, Mosesson MW, Dvorak HF. Delayed Type Hypersensitivity Skin Reactions in Congenital Afibrinogenemia Lack Fibrin Deposition and Induration. J Clin Invest 1979, 63:1302-1306.

8. Malik AB, Johnson A, Tahamont MV. Mechanisms of Lung Vascular Injury After Intravascular Coagulation. Ann NY Acad Sci 1982, 384:213-234.
9. Kay AB, Pepper DS, McKenzie R. The Identification of Fibrinopeptide B as a Chemotactic Agent Derived from Human Fibrinogen. Br J Hematol 1974, 27:669-677.
10. Richardson DL, Pepper DS, Kay AB. Chemotaxis for Human Monocytes by Fibrinogen Derived Peptides. Br J Hematol 1976, 32:507-513.
11. Sueishi K, Nanno S, Tanaka K. Permeability Enhancing and Chemotactic Activities of Lower Molecular Weight Degradation Products of Human Fibrinogen. Thromb Haemost 1981, 45:90-94.
12. Rowland F, Donovan M, Gillies C, O'Rourke J, Kreutzer DL. Fibrin: Mediator of In Vivo and In Vitro Injury and Inflammation. Curr Eye Res 1985, 4:537-553.
13. Saxne T, Lecander I, Geborek P. Plasminogen Activators and Plasminogen Activator Inhibitors in Synovial Fluid Difference Between Inflammatory Joint Disorders and Osteoarthritis. J Rheumatol 1993, 20:91-96.
14. Kikuchi H, Tanaka S, Matsuo O. Plasminogen Activator in Synovial Fluid from Patients with Rheumatoid Arthritis. J Rheumatol 1987, 14:439-445.
15. Kummer JA, Abbink JJ, De Boer JP, Roem D, Nieuwenhuys EJ, Kamp AM, Swaak TJG, Hack CE. Analysis of Intraarticular Fibrinolytic Pathways

- in Patients with Inflammatory and Noninflammatory Joint Diseases.  
Arthritis Rheum 1992, 35:884-893.
16. Belch JJF, McArdle B, Madhok R. Decreased Plasma Fibrinolysis in Patients with Rheumatoid Arthritis. Ann Rheum Dis 1984, 43:774-777.
  17. Dahlquist SR, Jonsson SW, Ranby M. Fibrinolytic Components in Synovial Fluid of Destructive and Non-Destructive Arthritis. Arthritis Rheum 1994, 37:S248.
  18. Herrick AL, Illingworth K, Blann A, Hollis S, Jayson MIV. Von Willebrand Factor, Thromboxane, B-Thromboglobulin and Markers of Fibrinolysis in Primary Raynaud's Phenomenon and Systemic Sclerosis. Arthritis Rheum 1994, 37:S259.
  19. Qi J, Kreutzer DL, Piela-Smith TH. Fibrin Induction of ICAM-1 Expression in Human Vascular Endothelial Cells. J Immunol 1997, 158:1880-1886.
  20. Kawasaki K, Hirase K, Masanori M, Tsuji T, Iwamoto, M. Amino Acids and Peptides XVI. Synthesis of N-terminal Tetrapeptide Analogs of Fibrin a Chain and Their Inhibitory Effects on Fibrinogen/fibrin Clotting. 1992. Chem Pharm Bull 40:3253-3260.
  21. Clifton EE, Grossi CE. The Rationale of Anticoagulants in the Treatment of Cancer. J Med 1974, 5:107-113.
  22. Peterson HI. Fibrinolysis and Antifibrinolytic Drugs in the Growth and Spread of Tumors. Cancer Treat Rev 1977, 4:213-233.
  23. Zacharski LR, Henderson WG, Rickles FR, Forman WB, Cornell CJ Jr, Forcier RJ, Edwards R, Headley E, Kim SH, O'Donnell JR, O'Dell R,

- Tornyos K, Kwaan HC. Effect of Warfarin on Survival in Small Cell Carcinoma of the Lung. JAMA 1981, 245:831-835.
24. Bardos H, Juhasz A, Repassy G, Adany R. Fibrin Deposition in Squamous Cell Carcinomas of the Larynx and Hypopharynx. Thromb Haemost 1998, 80:767-772.
25. Laudano AP, Doolittle RF. Studies on Synthetic Peptides That Bind to Fibrinogen and Prevent Fibrin Polymerization. Structural Requirements, Number of Binding Sites, and Species Differences. 1980, Biochemistry 19:1013-1019.
26. Shreck R, Meier B, Manne D, Droge W, Bauerle PA. Dithiocarbamate as Potent Inhibitors of Nuclear Factor kB in Intact Cells. J Exp Med 1992, 175:1181.
27. Lorenz H-M, Kalden JR. Biologic Agents in the Treatment of Inflammatory Rheumatic Diseases. 1999, Curr Opin Rheumatol 11:179-184.
28. Rothchild, BM, Thompson, LD, Pifer DD, Chesney CM. Perturbation of Protease Inhibitors and Substrates in Inflammatory Arthritis. Semin Thromb Hemostasis 1985, 11:394-404.
29. Belch JJF, Madhok R, McArdle B, McLaughlin K, Kluft C, Forbes CD, Sturrock RD. The Effect of Increasing Fibrinolysis in Patients with Rheumatoid Arthritis: A Double Blind Study of Stanozolol. Q J Med 1986, 58:19-27.